

THE
REPORT
OF A
COMMITTEE
APPOINTED TO EXPLORE
THE
WESTERN WATERS
IN THE STATE OF NEW-YORK:
FOR THE
PURPOSE
OF
PROSECUTING
THE

U.S. GEO. INLAND LOCK NAVIGATION. Co.

EXCHANGED

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(NEW YORK), 1651.

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REPORT.

THE Committee appointed on the 14th of August by the Directors of the WESTERN INLAND LOCK NAVIGATION COMPANY, in the State of New York, to examine the State of the Mohawk River, from the Town of Schenectady to Fort Schuyler, BEG LEAVE TO REPORT :

THAT on Monday, the 20th ult. they repaired to Schenectady, where they were joined, on the 21st, by Mr. Moses De Witt, as Surveyor, with whom, together with Mr Nesbit, and Mr. Lightall, a Carpenter, they proceeded in a batteau to fulfill, as far as they were capable, the object of their appointment. The result of their observations is contained in the following detail of a survey of the Mohawk River, taken when the water therein was less than has been known within the memory of the eldest person now living ; and consequently the impediments, to the navigation thereof, as great as they will probably be at any future period, without artificial aid.

	Miles.
FROM Albany to Schenectady	16
FROM Schenectady to	
Nº 1 In good water, one and a half mile, there a rapid, over which the water runs one and a half feet deep, the bottom small stones and gravel ; deep water above the rapid :	1 1-2
2 On in good water, one and a half mile, to Daniel Tolls, there a rapid, on which one and a half feet water ; bottom loose stones, deep above it, an island near the South shore :	1 1-2
3 On in good water, one quarter of a mile, to a sharp rapid, on which not more than one foot of water, bottom loose stones, the water above, deep :	1-4
4 On to Anthony Van Slykes, in good water, one mile, there a rapid, water deep above it :	1

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- Nº 5 On in good water, one and a half mile, then a sharp rapid, one and a half feet water, bottom loose stones and gravel, water shallow above it, current on the rapid very strong :..... 1 1-2
- 6 On one quarter of a mile to Jacobus Swarts, in shallow water, there a small rapid, bottom, loose stones, water deep above it :..... 1-4
- 7 On one half a mile, to John Mabey's water good, here lay the night of the 21st of August..... 1-2
- 8 On one and a half mile in good water, then a rapid at Sias Swarts : This rapid is one quarter of a mile long, great velocity of water, depth one and a half feet, bottom, stones and gravel, water, above the rapid, deep :..... 1 3-4
- 9 On two miles, current gentle, bottom level, shallow all the way, not more than from one to one and a half feet water :..... 2
- 10 On two and a half miles to Lewis Groots, passing two small rapids with sufficient water.... 2 1-2
- 11 On one and a quarter of a mile to the Willow Rapid : this rapid extends half a mile, has a sufficient depth of water ; the velocity of the water so great as to render the ascent for large batteaux very difficult :..... 1 3-4
- 12 On one half a mile to the late Str William Johnson's first settlement on the South side of the river, small rapids, but shallow, the greater part of the distance not more than one foot of water : 1-2
- 13 On one half mile to the creek on which Veeder's grist-mill is erected, shallow and small rapids, not more than one foot of water :..... 1-2
- 14 On one half mile to the lime-kiln the same as 12 and 13 1-2
- 15 On one quarter mile good water, then a rapid, sharp and very shallow bottom, loose stones, little water above it, the rapid one quarter of a mile long :..... 1-2

- N^o 16 On one quarter of a mile to the house late Guy Johnson's, rapid and shallow, 1-4
- 17 On about 3 1-2 miles to the beginning of deep water above or opposite the mouth of Schohara Creek; in all this distance continued rapids, so shallow that an empty batteau must be drawn up; the river wide, with several islands, the bottom generally loose stone, gravel and sand, 3 1-2
- 18 On five miles to John Fonda's, very good water, deep and gentle; here lay the night of the 22d: 5
- 19 On one half mile to the Caughnawaga rift, deep, incommoded with large rocks: 1-2
- 20 On nine miles, in perfectly good water, current gentle, then the rapid commonly called Kettar's Rapid, great velocity of water, sufficiently deep, obstructed by large rocks, the rapid extends about one quarter of a mile: 9 1-4
- 21 On in good water two miles to a small rapid at Bankers; water deep: 2
- 22 On one half a mile to Colonel John Fry's many sand banks in the river, easily removed to deepen the channel: 1-2
- 23 On in good water one mile, there a small rapid, deep water: 1
- 24 On three miles in good water, to a small rapid, sufficient depth of water: 3
- 25 On three miles to Mr. Nellis's, the river shallow, bottom loose stones and gravel, some large detached rocks; here lay the night of the 23d... 3
- 26 On two and a half miles to the ford, the rapid sharp, but smooth, and water sufficient: 2 1-2
- 27 On one and a half miles to Fort Hendrick, small rapids and shallow, the bottom loose stones and gravel: 1 1-2
- 28 On one mile in good water to John Van Druzen's, there two small rapids, water shallow, bottom, loose stones and gravel, water deep above the rapids: 1

- N^o 29 On three and a half miles to the Falls, the water deep all the way, current gentle, except at the place called the Haycocks, where the navigation is sometimes dangerous, occasioned by about one hundred rocks:..... 3 1-2

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From Schenectady to the Falls 53 miles.

- 30 From the landing at the foot, to the landing at the head of the Falls, is about three quarters of a mile, the height thirty-nine feet two inches, the ground stony, rocky and rough, proceeded the 27th :..... 3-4
- 31 On four miles in very good water, then a pretty strong rapid, extending one quarter of a mile, sufficiently deep, gravel bottom:..... 4 1-4
- 32 On one half mile, good water, to a strong sharp rapid, formerly called Orendorff's rift, falls a foot in about eighty yards two feet water, a fine gravel bottom:..... 1-2
- 33 On one mile in good water, then arrived at the Wolf Rift, extending about one half mile, bottom fine gravel, shallow, and the channel crooked, occasioned by banks of gravel in the river:.... 1 1-2
- 34 On to Fort Herkimer three quarters of a mile, good water, here lay the night of the 27th..... 3-4
- 35 On to Fort Schuyler as the river runs about forty-five miles, in all this extent a few rapids and most of these of little consequence, those that impede the navigation in very dry season easily deepened, as the water above them is invariably deep, the greatest obstruction is from timber in the bottom, and on the sides of the river, arrived on the 29th..... 45

 121 3-4

- 36 On across the portage to Wood Creek, eighty-one chains through level grounds and swamps, the Mohawk about two feet higher than Wood Creek.

Mr. SCHUYLER descended Wood Creek in a batteau. He found the obstructions occasioned by timber, or rapids from the landing at the place where Fort Newport formerly stood, to that where Fort Bull was erected, quite trifling; but the Creek so shallow that the batteau could not have passed without the aid of water previously collected in Mr. Lynch's dam. From Fort Bull to where Canada Creek enters Wood Creek, the rapids are many and sharp, with little water, the obstructions from timber trifling. From Canada Creek he walked about half a mile down and found a sufficiency of water; From thence to the Oneida Lake he was informed, the navigation was greatly impeded by timber in the creek, as well as by many short turns.

HAVING given this detail of the state of the river, and the obstacles to a competent navigation thereof, the Committee proceed to give their opinion of the works which will be necessary to improve the navigation so as to fulfil the views of the Legislature, who incorporated the company—the places where these works ought to be erected; and to estimate the probable expence. In all this business great allowance must be made for defects, arising from a want of experience, and the assistance of persons practically conversant with the subject.

FROM the preceeding description of the river, the board will readily perceive that from Schenectady, to the mouth of Schohara Creek, the obstructions are many, from the number of rapids, the little water on those rapids and above them. Several of the rapids might be deepened by erecting small stone dams, nearly across the river, leaving a passage for boats; but this whilst it would give a sufficiency of water, would so increase its velocity, as to render an ascent with a half loaded boat, of a size to carry three or four hundred bushels of wheat, extremely difficult, without the aid of machinery to draw up the boat, and such machinery it would be difficult permanently to erect, on account of the vast quantity of ice which suddenly descends whenever the Schohara Creek breaks up in the spring of the year, and which would destroy such machinery.

SOME of the rapids may be deepened by removing the stones in the bottom, but this can only be successfully executed where the water above the rapid is deep; for if it is not, another rapid

is formed immediately above, by deepening the existing one. But the improvement of this part of the river although difficult yet it is feasible, and would be easily so, without any very extraordinary expence, if the bed of the river was a solid rock; for then four or five dams at proper distances would create a series of ponds, covering the intermediate rapids; and hence by means of a lock and guard gates at each dam, boats would ascend or descend from the one to the other in succession, but to drive piles to secure all the dams from blowing, would be so arduous and expensive an operation, that a canal and locks in the adjacent grounds would be infinitely preferable. These various difficulties have employed the closest attention of your committee, and they determined on a re-examination of this part of the river: Mr. Schuyler accordingly, on his return re-viewed the river, and the contiguous grounds from N^o 17, towards N^o 16: It appears to him practicable, and probably most effectual, as well as cheapest, to erect a strong dyke of timber and stone, parallel to the bank of the river, from the deep water just above the mouth of Schohara Creek, and on the north side of the river, until it shall descend the river as far as to gain height sufficient to enter the bank below the rocky part, which would be at the distance of about 1100 yards, and, as the fall then would be about 9 feet a lock might be constructed there, and thence a canal might be carried through good grounds on the low lands, having the uplands on one side, until just below Clyne's tavern, where it would again enter the river, continued and confined by a dyke, or embankment for about 300 yards; and then again through the low lands along the foot of the up lands to the river near the house of the late Guy Johnson, where it would enter the river with one or more locks: The whole distance from N^o 17 to this point is about four miles. Near the point of beginning above mentioned, that is near N^o 17, guard gates will be requisite, to prevent the water in high freshes from overwhelming the Canal and Locks. But as the Navigation between this point, and that a little to the westward of N^o 9, must also be improved, to enable loaded boats to pass in dry seasons, it necessarily claimed attention: Here Mr. Schuyler found good banks on both sides of the river, at a place a little above N^o 9, the width of the river about

200 yards. If a dam was here erected across the river about nine feet high it would probably deaden the water to where the Canals and Locks above mentioned shall enter the river, near Guy Johnson's, and so overcome the Willow, and the other rapids in that space. If the bottom of the river should be rock, the expence of the dam, would not be great, if not, it must be piled; in either case there is little doubt but that it would stand the shock of the ice and freshes; a Lock would be requisite here, to ascend into, and descend from, this dam. At some distance below this dam and lock, a canal may be led from the river on the south side, secured with guard gates, and run through low lands, and well sheltered along the foot of the hills and re-enter the river at Daniel Peck's, which is supposed to be about N^o 5, and thus, with the necessary locks, every difficulty would be obviated. For want of accurate surveys and implements to determine the quantity, and kind of earth and stone, or rock, to be removed, it is absolutely impossible to ascertain with any degree of precision, the expence that would attend the proper improvement of this part of the river; it certainly will be considerable, probably not less than £20,000.

FROM Schohara Creek to the falls, it does not appear necessary to form any Canals, the rocks which impede the passage of boats in the Caughnawaga, Keetar's and Haycock's rapids, and other places, will be easily removed by rolling them to the shore, or when too large by blowing them. Those rapids which are too shallow may be deepened by removing the stone and gravel, as the water above is in general deep, and if cuts are made through the gravel and sand banks, which obstruct the river about Fox's Creek, and a little higher up the navigation will be such as the act contemplates, and the expence will probably not exceed £2,000.

THE portage at the Little Falls will be a heavy part of the work,—the plan herewith delivered marked A, will exhibit the tract of a Canal,—that marked B,¹ a section thereof; the height to be surmounted is thirty-nine feet two inches, and will require first a strong work at the point B, to prevent the Canal and Locks from being overflowed, and damaged in high freshes; at

¹ These plans do not accompany the pamphlet.

this point two guard gates at the distance of seventy feet from each other must be placed; the surface of the ground here is eight feet eight inches above the level of the water in the river above the falls, and, as three feet ought to be given for the depth of the water in the Canal, the depth to be dug at this point will be nearly twelve feet; if to the several heights marked on the plan at the other points C, D, and E, three feet be added we shall have the depth to be dug at these points; at F we gain the level and thence from F to G only three feet is to be dug. Many large stones and rocks, and probably much solid rock will be found in all the distance from A to G which is 1666 feet; the quantity of earth, stone, and rock to be removed in this space, if the Canal has ten feet base, will be about 242,200 cubic feet; From G to H which is 422 feet the Canal must be confined by a double dyke, or embankment, about four feet high: From H to I which is 123 feet. the whole depth to be dug is about $4\frac{1}{2}$ feet, and contains 5085 cubic feet: From I, at various places to the water at the bottom of the falls about 100,000 cubic feet of earth must be removed, and about 1,200 feet of a dyke to be made. An estimate of the expence of this work with five Locks, is annexed, and amounts to £10.500.

FROM the falls to Fort Schuyler, the only impediments of any amount are occasioned by the two rapids called Orendorff's, and Wolf's rapids, these are sharp and extended, and the river here forms a circuit, which lengthens its course beyond a straight line, from the foot of the former to the head of the latter about 1 1-2 miles. It is believed that merely a cut through the chord of this circuit of about half a mile, in easy digging and of little depth, would effectually surmount these obstacles. The other rapids which are neither long, sharp, nor many, descend from deep water immediately above them, and may, therefore be permanently deepened at a moderate expence. The residue of the impediments in all this part of the river are occasioned by trees fallen into the river either accidentally, or cut down by the inhabitants. The whole expence of improving the river from the falls to Fort Schuyler will probably not exceed £3,000.

Across the portage at Fort Schuyler a Canal must be cut; the length of it will be 5352 feet: This Canal will run in the direc-

tion ABC, see the plan C. The water in the Mohawk at the point A is one foot four inches and four tenths of an inch higher than at the point C. Obstructions by heaps of fallen trees, prevented us taking a section of the Canal in the direction which it would run, but apparently the mean depth of the earth to be removed for forming the Canal would be about twelve feet at the greatest depth, hence about 642,240 cubic feet of earth must be removed : The ground though soft is so much interwoven with the roots of trees and the work will also be so much retarded by the influx of water into the Canal whilst digging, that it is supposed that one man could not remove above fifty cubic feet per day, hence 12,845 days for one man would be required ; which at 4s. per day amounts to £2,569. In very dry times, such as the present, the water in the Mohawk is so little that none can be spared to increase the quantity in Wood Creek. A bulkhead must therefore be placed at the point C precisely of the height with the level of the water in the Mohawk, a boat then in this low state of the river coming up Wood Creek to the point C must unlade, and be drawn across the bulk head into the Canal ; there reloaded and proceed through the Canal into the Mohawk River ; but when the Mohawk River rises so much as that a quantity of water equal to carry an empty boat is added to the water in the river, the water on the bulk head will rise to nearly that height, and the empty boat will pass. If the rise be equal to the water drawn by a loaded boat, the boat and its cargo will pass the bulk head into the Canal. It is evident by this arrangement the navigation of Wood Creek will be much mended whenever the water in the Mohawk is higher than at present. The whole expence at this place will probably not exceed £3,000.

ARRIVED at this point, it will be optional with the company to extend their improvements to Ontario; and the Seneca Lakes ; or not, but as in the present state of Wood Creek, the produce of the country beyond cannot be brought into the Mohawk, and consequently the company deprived of the advantage of the toll thereon ; It therefore appears to your committee indispensable that the Wood Creek, in all its extent, should be improved, by

removing the timber which obstructs its navigation; probably the expence will not exceed £1,000.

THE aggregate of the estimates to complete the navigation from Schenectady to Wood Creek is £39,500.

THE committee conceive it necessary before they proceed to state to the board what works, in the opinion of the committee, ought to claim the first attention of the company, to make some remarks which they believe not irrelative to the subject.—An opinion is entertained by some, that since the company is permitted by the act of incorporation, to divide a clear 15 per cent. on all their expenditures, the higher the expence, the greater will be the profit to the stock-holders; and that, therefore, the improvements should be made in the completest manner, that is, on the most expensive scale :—This appears plausible in theory, but may and will probably be found fallacious on actual experiment, and injurious to the interest and reputation of the company—Injurious to its interests, if the tolls, after deducting the current expences, should not amount to such an interest, as money can from time to time be improved at, and as the legal interest only of the sum above stated, which supposes a complete improvement in all its parts (without estimating the expence of clearing Wood Creek) amounts annually to £2765. It will easily be discovered, from computation founded on probable data, that the tolls on all the Produce, if the toll and freight was equal to the expence of carriage by land, would not in the present state of the country produce such an annual revenue; but the tolls and freight ought to be less, and after some years, considerably less than the expence of land transportation, for if not, the improvement of the navigation would have no beneficial object to the community. The time will doubtless arrive, and the country is rapidly progressing to the point when the quantum of produce shall be so extensive, as to support the expence of the most complete improvement of the entire internal navigation in all its parts, as contemplated by the act of incorporation, when this happens it will decidedly be the interest of the company, and equally that of the community; also, to prosecute the works in the most complete manner, for under such circumstances the greatest percentage, on the aggregate expenditure, permitted by the act may

be taken, without an increase of toll on the separate articles :—Nay, probably with a progressive diminution of the aggregate of freight and toll on each article, until it becomes stationary at its lowest possible point. But at present, to complete the navigation, on a scale more extensive than what is indispensibly necessary, would be injurious to the reputation of the company, as it would tend to burthen the produce of the country with an extent of toll and freight little short of the present expence of land, or even water, transportation in its present state : whereas it ought to be the invariable pursuit of the company so to conduct its operations as that its interests and those of the community may go hand in hand.

IF these observations are founded as the committee conceive they are, then it will follow that the exertions of the company ought to be directed in the first instance to those parts of the navigation only, in which the most immediate obstacles are interposed, and which promise the best revenue at the smallest expenditure, that is with the least possible burthen on the produce of the country. Effectually to do this, legislative interposition ought to be solicited. The canal and locks by the act are to be 20 feet wide, this stipulation was inserted in the law, under an idea that large rafts of timber would descend the improved navigation. But your committee have critically examined into this, and find that very little, if any, will be conveyed—that if any does, the expence of narrower rafts, will not be so injurious to the community, as that increase of toll, which must necessarily be incurred from the expence of such wide canals and locks, because the quantum of lumber will at any rate be little, compared with that of other produce.

THE improvement of the navigation of Wood Creek has been stated as indispensable.—But should the company find themselves incapable of extending the navigation to Ontario and the Seneca lakes, no toll could be taken for the improvements which may be made in Wood Creek,—the legislature should, therefore, be intreated to leave it optional in the company, to carry their improvements to any point beyond Fort New-Port, which they please ; and their charter to extend to the point at which their improvements may be arrested, although they should not be

carried to the Ontario and Seneca Lakes, as was originally contemplated ; and to intreat the liberty of using the waters of their canals, for any hydraulic works, which they may erect, without carrying the profits into account as any part of the per centage which they are permitted to take.

THAT if in the greater part of the navigable season, the navigation shall be so improved, as that two feet of water can be carried in the shallowest of the river, the charter should not be forfeited, if in the other parts of the season two feet of water could not be carried in every part—Because as the population of the country progresses, and a consequent increase of the transportation of its produce, the strong motive of self-interest, without any other inducement, will impel the company to every extent of improvement which the transportation of the produce of the country shall indicate as necessary.

HAVING premised thus much your Committee beg leave to observe, That since (except in such an extraordinary dry season as the present) the river from Schenectady to Schohar Creek is capable of considerable navigation—is still better from thence to the Falls, and will be good to Fort Schuyler, especially if the trees and timber are removed, That therefore, except the removal of the trees and timber West of, and blowing a few rocks on, some of the rapids, East of the Falls, nothing further should be speedily attempted in the parts mentioned ; but that the primary exertions should be directed to the Canal and Locks at the Falls; that when this is completed, the water in the river above, will probably be sufficiently low to clear away the timber which incommodes it, and to do the like by Wood-Creek down to the Oneida Lake, and to remove the most dangerous rocks below the Falls: This accomplished, the next in degree of eligibility, appears to your Committee, to extend the navigation from Schenectady to the navigable waters of the Hudson—Because when with the improvements above suggested, the river shall be rendered navigable in the greater part of its extent from Fort Schuyler to Schenectady, in all seasons not so dry as the present, for boats of considerable burthen; yet the portage from Schenectady to Albany, is not only a very heavy charge on the produce of the upper country, but attended with serious incon-

veniences to those who enter largely into the interior commerce. To prepare for the accomplishment of this apparently very necessary part of the navigation, your committee recommend, That accurate surveys should be made, as early in the ensuing spring as circumstances will permit, to enable the board to determine the direction in which Canals are to run, to take the necessary preliminary measures for providing the materials; that, if the works at the Falls, &c., should be completed before the whole of the next operating season is expired, the residue may be appropriated to this important part of the navigation, and completed in the succeeding year;—Soon after this shall be accomplished, the company will be enabled to judge with precision, what farther is in their power, and if what they have done, should prove beneficial to the community at large, and the resources of the company be then found not competent to such a perfect completion of the whole internal navigation, as is contemplated by the act of incorporation, there can be little doubt but that an enlightened Legislature will extend its aid, to objects promising such extensive benefits to every class of citizens.

It now remains for your Committee to venture an opinion on the mode of conducting the contemplated improvements. The observations already made will evince the necessity of strict economy in every operation. It will certainly occur to the Directors, that in a work so extensive, as that committed to them, much unnecessary expence, and much waste of time must be incurred, unless the executive part of the business be properly conferred; and your committee, to avoid this evil as much as possible, recommend that the executive of the business should be committed to a single directing head, to a man of known and acknowledged abilities, of a mind so comprehensive, as to combine and form all the arrangements, with a minute detail of each part; capable of foreseeing what will be wanting in future, that the supplies may be prepared, without incurring that extra expence which ever attends collections made on the spur of the occasion; In short, a man, who if he has not had practical experience, has activity, ingenuity and judgment sufficient to compensate in a degree for that defect—so capable of profiting by experiment, that the artists, whom he superintends, may not

injuriously impose on the company. To engage such a person, your Committee conceive would be true economy ; to find such a character is certainly not very easy ; but it well merits the attention of the board to find one thus qualified ; the eyes and the hopes of the stock-holders, and those of the community, will naturally be turned to the directors ; It is therefore, incumbent on them to begin well, to proceed with vigour ; but with that degree of circumspection, which is the result of mature deliberation. Well digested arrangements, steadily and unremittedly persevered in, are capable of, and certainly will surmount, all but perfect impossibilities.

A PERSON who has had practical experience in making canals and locks, would be a desirable and valuable acquisition, but such person may not be attainable in this country ; if so, it has occurred to your committee, that probably the defect might be supplied, if the person to whom the general direction shall be committed was to select two or three of our most ingenious and best informed carpenters, and repair with them to view the works in Pennsylvania and Virginia, with a critical and close attention. Canals and locks are already formed there, and little doubt can be entertained but that every information which gentlemen are capable of communicating will be afforded with alacrity ; and your committee have too good an opinion of their countrymen to apprehend, that if your superintendant is a man of genius, and the mechanics who accompany him men of approved reputation in their professions, they would not after such an inspection be able to fulfil the wishes of their employers with satisfaction and credit to both.

For completing the works at the Falls, for removing the obstructions by rocks, &c. between Schohara Creek and the Falls, for clearing the river from the Falls to Fort Schuyler, and removing the timber out of Wood Creek, to the Oneida Lake, and for accomplishing all this in the next season, your committee are of opinion that at least,

40 Carpenters should be engaged in four companies.

10 Masons in one company.

5 Miners.

1 Black-Smith.

2 Lime-Burners.

200 Able-bodied laborers, to be engaged for the whole season,—that is, from the month of May to October, both inclusive : That the 200 labourers should be divided into eight companies, with an overseer to each ; That the wages of each should be stipulated; that they should furnish themselves with provisions and liquor, to avoid those bickerings which constantly result from complaints of bad provisions, &c.—That each company of carpenters, and miners, masons and blacksmiths, and each company of labourers should be allowed a person to cook their victuals—that each individual find his own bedding.—That as the carpenters, &c. may not be able to purchase provisions in the country, a stock of provisions and liquors should be laid in, and sold them at prime cost, with the charges of transportation added : That the working hours should be stipulated to prevent controversy.

THE expence of those workmen, &c. may be,—

40 Carpenters for 160 days at 9s. per day.....	£2880
10 Masons do do 9s. — —	720
15 Miners do do 9s. — —	360
1 Blacksmith do do 9s. — —	72
2 Lime Burners do do 9s. — —	144
200 Labourers do do 4s. — —	6400
8 Overseers do do 9s. — —	576
Additional pay to 4 Master Carpenters and a Master	
Mason 160 days at 4s.....	160
Clerk of the Checque for 160 days (who is also to	
deliver the provisions and tools, and keep all the	
accounts) at 10s.....	80
11 Cooks for 160 days at 4s.....	352
1 Surveyor with four Assistants (to be employed when	
requisite) at 40s. per day, estimated at.....	170
A person to attend at the Falls during the winter to	
receive the timber, &c. and to be kept as an	
assistant during the next season, per annum.....	150

£12,064

ESTIMATE of the expence of the canal and locks at the Falls, from the data given in the preceding report and annexed map ;

the quantity of earth, stone, and rock which it will be necessary to remove to form the canal and locks, supposing the base of the canal to be 10 feet, will be in round numbers about 350,000 cubic feet. If one half is either solid, or such other rock as will require to be bored and blown, that half will be 175,000 cubic feet; if then one miner can blow one cubic yard per day, it will require 6500 days for one man to complete the whole blowing, his wages at four shillings per day, amounts to..... £1300

Removing the blown stone and earth out of the canal, 350,000 cubic feet, supposing 100 cubic feet removed by one man, in one day, it will require 3500 days work to do the whole, at 4s. per day is..... 700

Gunpowder, brimstone, match paper, brickdust, and borers, scrapers and primers, estimated at..... 500

The whole of the dyking to be made by two parallel walls of four feet thick, each at the distance of seven feet, from the inside of one to the inside of the other: The solid contents of the masonry is computed at 150,000 cubic feet: A mason will lay of such work 60 cubic feet per day..... 1125

One man to attend the mason 2500 days at 4s..... 500

Carting the stones, at 1s for every 20 cubic feet, for 150,000 cubic feet..... 375

The spaces between the walls of the dykes to be filled with earth or stone; the latter preferable, when cemented with quick lime: The solid contents to be filled about 80,000 cubic feet at 1s. for carting the stone is.. 200

5000 Bushels of lime at 1s..... 250

Five locks besides the guard lock will be required: If these extend each 70 feet, and the projections beyond each 50 feet more the whole extent will be 720 feet. But as all the work must be double on each side, the whole length will be 2880 feet: If the timber be 12 inches squares, and the sides 10 feet high, it will require 28,800 cubic feet. For bottom sills, one to every 3 feet, is 180 of 30 feet long, equal to 5400 cubic feet.—360 posts, 10 feet long, is 3600 cubic feet. Braces to cross from the interior to the exterior side—one for

every four feet is 180 for a side, or 360 for both sides, multiplied by 10 in height, is 3600, and by 10 in length is 36000 ; but as these require to be only 5 by 7 inches, the cubic feet will be about 9000.— For gates about 3000 cubic feet, is in all 46200 cubic feet, at 30s. per hundred is..... 693

Filling in with earth, raming the same, about 72000 feet at 100 feet per day for one man at 4s. is..... 144

500 Plank of 3 inches thick, for the bottom, at 4s. is 100

250 Plank of 3 inches thick, for the gates, at 4 shillings is 50

Spikes, iron work, &c..... 200

Framing, 30 carpenters, 100 days at 9s..... 1350

House for the officer to attend the locks and receive the toll..... 150

Spades, shovels and other implements, nails, crow bars, &c. &c. estimated at... 400

Superintendant, overseers and other contingences,.. 2500

Total £10,535

A previous provision of materials, implements, and store: being indispensable to prosecute the works with economy and dispatch, in the ensuing spring, your Committee will close this report, with a list of such articles, as they deem requisite to be collected at the Falls during the winter, and of such as should be prepared here, to be sent thither as soon as the navigation of the Mohawk opens in the ensuing year.

All which is submitted,

PHILIP SCHUYLER, }
 GOLDSBROW BANYAR, } Committee
 ELKANAH WATSON, }

Albany, September, 1792.

